

REMARKS

Claims 1-22 are pending in the application.

A) Claim Objections

Claim 15 is amended to address an informality and overcome the objection thereto.

B) 35 U.S.C. § 102

Claims 1-4, 7, 8, 10, 12-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Oster (US 4,844,420).

An exemplary feature of the invention is the claimed tubular portion that may sit about an apex of the cone, etc. Thus, the barrier unit is easy to install and to remove, and is simple to deploy as a modification to existing road traffic cones. By relying on an interference fit, the invention avoids needing mechanical fixings, such as a screw.

The invention of claim 1 comprises a mounting means comprising a tubular lower portion shaped to co-operatively engage around an upper portion of a post in an “interference fit.” Claim 16 incorporates a similar feature. To expedite prosecution, Applicant amends claims 1 and 16 to describe an exemplary aspect of the present application. In particular, Applicant envisaged embodiments for use with simple upright cylindrical posts, with true road cones having a genuinely conical (or most strictly frustoconical) shape, with pyramidal structures with portable warning triangles, and with any other form of temporary signage for placing on a road.

In practice, Applicant has found that a significant practicality is for genuine cones of the type illustrated in Figure 4, which have a geometrically frustoconical shape with a taper towards the top. Applicant amends claims 1 and 16 to describe a tapered tubular portion that is co-operably configured to engage with such a structure. Since it is necessary that the mounting

means engage over and about the apex of such a truncated conical structure in an interference fit, and is shaped co-operably so to do, it follows that the mounting means, at least internally, is co-operably tapered to a section of such a conical shape, as shown in Figure 4 of the present application, for example. It is also inherent from the requirement that the mounting means is co-operably shaped to effect a snug interference fit, that in such instances the mounting means must be correspondingly tapered, at least in relation to internal engaging surfaces.

Neither Oster nor Johnson (applied below) discloses, teaches or suggests the combination of features including the tapered shape, which is necessitated by the interference fit with truncated conical structures and the like. An “interference fit” would clearly be understood as a fit necessitating force sufficient to cause expansion in one mating part or contraction in another during assembly in order to produce a fitted state where removal is to some extent resisted by the resultant compressive frictional engagement. This definition is supported by at least the reference to the possibility (e.g., see page 5 lines 11 to 14 of the present specification) that the mounting portion will be modified to improve its flexibly resilient deformable properties. It is clear that the term “interference fit,” particularly in this context, should be taken as referring to a negative fit necessitating force sufficient to cause deformation, the resulting compression of one part against the other effecting the fit of the two mating parts, as noted in the attached pages of the Larousse Dictionary of Science and Technology, provided as an Appendix. Applicant also provides the attached reference to the April 2006 NASA thesaurus which has a clear definition of an interference fit.

The invention of claims 1 and 16 does not require a specifically fitted threaded portion or fastener, as in both of Oster and Johnson. Instead, the present specification describes the invention as being used with existing, non-modified cones, triangles, etc. Therefore, the invention of claims 1 and 16 does not require further mechanical fixings, such as the screws, or other items required in prior art.

The prior art is neither tapered to fit a road traffic cone of the simple deployable type described in the application, nor does it effect a true interference fit, and does not disclose the features of claims 1 and 16. These features are important in providing a simple tape dispensing apparatus and method that are adapted for use with existing road traffic cones without requiring any modification to the cones, and which can therefore readily convert a conventional cone-based system into a much more effective temporary deployable barrier with readily attachable and readily removable barrier cartridges. Claims 2-4, 7, 8, 10, 12-15, 17 and 20 are deemed to be not anticipated at least due to their respective dependencies on claims 1 and 16.

C) 35 U.S.C. § 103:

Claim 11

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oster. The Examiner acknowledges that Oster fails to disclose a plurality of receiving means disposed radially around the cartridge and contends that it would have been obvious to provide a plurality of eyelets 16. Applicant respectfully submits that claim 1 is also not obvious in view of Oster, such that claim 11 is patentable over Oster at least due to its dependency.

Claims 5 and 6

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oster in view of Signorelli (US 6,053,657). The Examiner acknowledges that Oster fails to disclose tape having surface patterns or hazard warning markings, and fails to disclose tape having a reflective surface. Figure 11 of Signorelli is therefore applied for disclosing tape labeled with “work area,” and col. 1, lines 29-30, of Signorelli is cited for disclosing the use of a reflective material. Claims 5 and 6 are deemed patentable over the references at least due to their respective dependencies on claim 1.

Claim 9

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oster and further in view of Langlie et al. (US 6,595,496). The Examiner acknowledges that Oster fails to disclose releasable locking means and, thus, relies on the lock lever 54 of Langlie et al. Applicant submits that claim 9 is patentable over the references at least due to its dependency on claim 1.

Claims 18, 19, 21, and 22

Claims 18, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oster as applied to claims 1 and 16, and further in view of Johnson (US 6,119,621). The Examiner acknowledges that Oster does not disclose a traffic cone or a triangularly shaped traffic control device.

The Examiner asserts that the lower part of housing 12 in Oster “can be considered as flexibly deforming around an outer portion of a traffic control upright as shown in Fig. 1 of Oster.” Applicant initially points out to the Examiner that Oster does not teach or suggest that the housing “flexibly deforms.” In particular, the description in Oster does not explicitly state

that the housing “flexibly deforms,” nor do the drawings of Oster indicate any deformation. Instead, Oster’s device is held in place by fasteners 46 and 48 and could actually be hindered by an interference fit. For example, an interference fit in Oster could obstruct the ability to easily align the respective fasteners and threaded portions of the housing 12 and member 36.

Johnson is relied on to teach a barrier tape mounted on a modular cone (see Figure. 1).

Johnson discloses:

“the caps are releasably secured (by *screwing thereon*) at the second end 18 of the tubular member 12 ... The cap member 63a, 63b, 63c is releasably screwed onto the body member 61a, 61b, 61c...” (Emphasis added).

See col. 4, lines 39-53 of Johnson.

If one were to mount the housing of Oster on Johnson, they would screw Oster’s housing onto the tubular member 12 of Johnson based on the explicit teachings in Johnson. Alternatively, based on Oster’s teachings, one might utilize the fastener 46 or the threaded configuration 48 and 50. Thus, Applicant submits that the features of claims 18, 19, 21 and 22 are not taught nor suggested by the combined references, and the references do not teach a mounting means that “flexibly deforms,” as recited in claims 18, 19, 21 and 22.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Patent Application No. 10/509,389

ATTORNEY DOCKET: Q83815

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

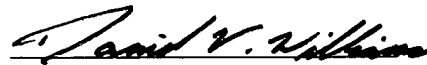
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Appendix

LAROUSSE

Dictionary of
SCIENCE
and
TECHNOLOGY

General Editor

Professor Peter M B Walker, CBE, FRSE

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er (Autos) A form of heat exchanger which the temperature of inlet air to improve volumetric in an engine with a turbocharger.

er (Eng) A cooler, generally consisting of water-ribes, interposed between successive cylinders or a multi-stage compressor or blower, to reduce of compression.

al (Zool) Between the ribs.

alline failure (Eng) Refers to metal fractures ow the crystal boundaries instead of passing the crystals, as in the usual transcrystalline It is frequently due to combined effect of stress nical action, but may be produced by stress en the conditions permit a certain amount of lization under working conditions.

l (Build) The space between successive dentils. **ndent functions (Maths)** See dependent func-

al cyst (Vet) An abscess occurring between the the paw of the dog due to bacterial infection.

al structure (Electronics) One in which the path length between a pair of terminal elec- increased by an interlocking-finger design, y be three-dimensional or formed by metalliza- an insulating surface. Used for transistors, s and integrated-circuit devices, for converting ve signals into surface acoustic waves and as a e structure or part of a filter.

ring cells (Immun) Bone marrow-derived id in lymphoid tissues where they interdigitate ymphocytes. Interdigitating cells express high of major histocompatibility class II proteins involved in the presentation of antigen to T lymphocytes.

l (Zool) An intercalary element lying between basidorsals of the vertebral column.

ode capacitance (Electronics) That of any electrodes in a valve, other electrodes being Also internal capacitance.

Aero, Space) Relationship between parts of a subsystem which ensures that their eventual will be harmonious; the interface may be (eg mechanical, thermal, electrical) or non- eg software, organizational) and all conditions ntual union are controlled as part of the system ation.

(Comp) Hardware and associated software o enable one device to communicate with

Electronics) A shared boundary. It may be a ardware used between two pieces of equipment, of computer storage accessed by two or more , or simply a surface that forms the boundary wo different materials.

MinExt) Sharp contact boundary between two ther or both of which may be solid, liquid or Differs from interphase in lacking a diffuse zone.

film (MinExt) Special state developed in tion, in which oriented molecules of the g agent are loosely aggregated in such a way und and enclose droplets of one phase of the mixture.

surface tension (Phys) The surface tension ace separating two non-miscible liquids.

lar cambium (Bot) Vascular cambium be- vascular bundles of the stem and joined to the in the bundles to make a complete cylinder.

lar region (Bot) Tissue between the vascular a stem. Also *medullary ray*, *pith ray*.

e (Aero) Mutual aerodynamic interactions lid bodies in airflow, the drag of the combined eeding that of their separate drags by the e drag. Thus the lift of the lower wing of a reduced by the flow under the upper wing.

interference (Biol) The usually negative effect that the presence of one chiasma has on the probability of a second occurring in its vicinity.

interference (Phys) Interaction between two or more waves of the same frequency emitted from coherent sources. The wavefronts are combined, according to the principle of superposition, and the resulting variation in the disturbances produced by the waves is the interference pattern. See *interference fringes*.

interference (Telecomm) Any desired energy that tends to interfere with the reception of desired signals. May be man-made, eg from electrical machinery, power lines or radio-frequency heating systems, or due to natural phenomena, esp atmospheric electricity. In crowded wavebands or abnormal propagation conditions interference may be from other transmitters.

interference factor (Telecomm) See *telephone influence factor*.

interference fading (Telecomm) Fading of signals because of interference among the components of the signals which have taken slightly different paths to the receiver.

interference figure (Crystal) More or less symmetrical pattern of concentric rings or lemniscates, cut by a black cross or hyperbola, exhibited by a section of anisotropic mineral when viewed in convergent light between crossed Nicol prisms or polarizers in a polarizing microscope. See *biaxial*, *uniaxial*.

interference filter (Phys) Light filter which uses interference principles to select a range of wavelengths for transmission. If a beam of light is incident normally on a Fabry-Pérot etalon with a plate spacing d of between 2×10^{-7} m and 6×10^{-7} m, then there will be only one wavelength in the visible region for which there is an interference maximum ($n\lambda = 2d$, where λ is the wavelength and $n=0,1,2,\dots$). The highly reflecting surfaces of the etalon ensure that only a narrow band of wavelengths around λ is transmitted. Interference filters can also be made by successively evaporating dielectric and silvered films of suitable thickness on a glass plate.

interference filter (Telecomm) Means of reducing interference, eg a tuned rejector circuit for a single steady transmission, or a band-pass filter to reduce the accepted band of frequencies to the minimum. Also *interference trap*.

interference fit (Eng) A negative fit, necessitating force sufficient to cause expansion in one mating part, or contraction in the other, during assembly.

interference fringes (Phys) Alternate light and dark bands formed when two beams of monochromatic light having a constant phase relation overlap and illuminate the same portion of a screen. The method of producing fringes is either by division of wavefront (see *Fresnel's biprism*, *Lloyd's mirror*) or by division of amplitude (see *Haidinger fringes*, *Fabry-Pérot interferometer*, *Fizeau fringes*, *Newton's rings*).

interference microscope (Biol) Microscope in which the phase changes caused by differences in optical path (refractive index times thickness for transmitted light) within the specimen can be measured or made visible as differences in brightness or colour in the image. The light is split into two beams, one passing through the specimen, the other, the *reference beam*, ideally through empty medium near the specimen. The two beams, with suitably manipulated phase, are then made to interfere at the image plane. Areas of specimen which have similar optical paths appear in the image similarly bright or coloured. Because the refractive index of an aqueous solution is nearly proportional to concentration of solutes, the microscope can be used to estimate the dry mass (to 'weigh') microscopic objects. Cf *differential interference contrast microscope*. See *phase contrast microscopy*.

interference microscopy (Eng) Special optical microscopic method for examining polished material surfaces. Utilizes monochromatic light shone vertically onto surface through angled glass plate. Interference of reflected beam with incident beam gives fringe map of

Appendix

NASA/SP—2006-7501/VOL1



NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

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April 2006

surface tension driven convection

∞ surfaces

tensile stress

∞ tension

thermocapillary migration

tribology

vapor pressure

wetting

∞ **interference**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT aerodynamic interference

coherence coefficient

crosstalk

disrupting

electromagnetic compatibility

electromagnetic interference

hum

incompatibility

interference factor table

interference grating

intersymbolic interference

jamming

nonsynchronization

radio frequency interference

Ramsauer effect

support interference

wave diffraction

wave front deformation

interference drag

GS aerodynamic characteristics

. **interference drag**

dynamic characteristics

. drag

. . pressure drag

. . . wave drag

. . . . **interference drag**

RT propeller slipstreams

supersonic drag

upwash

interference factor table

GS tables (data)

. **interference factor table**

RT ∞ interference

modulation

multichannel communication

interference fit

DEF The condition where the diameter of the fastener is larger than the hole that it is to fit in.

GS joints (junctions)

. **interference fit**

RT aircraft structures

fasteners

fatigue life

fitting

mechanical properties

stress analysis

interference grating

RT fringe multiplication

∞ gratings

∞ interference

Moire effects

Moire fringes

radio filters

radio frequency interference

interference immunity

RT electromagnetic interference

noise reduction

radio frequency interference

signal processing

signal to noise ratios

space-time adaptive processing

interference lift

GS aerodynamic characteristics

. lift

. . **interference lift**

aerodynamic forces

. lift

. . **interference lift**

distribution (property)

. **interference lift**

dynamic characteristics

. lift

. . **interference lift**

RT upwash

interference monochromatization

USE **diffraction**

monochromatization

interferograms

USE **interferometry**

interferometers

DEF Apparatus used to produce and measure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.

GS measuring instruments

. **interferometers**

. . etalons

. . Fabry-Perot interferometers

. . infrared interferometers

. . Mach-Zehnder interferometers

. . Michelson interferometers

. . microwave interferometers

. . phase switching interferometers

. . radio interferometers

RT astronomical interferometry

Bragg gratings

diffractometers

flatness

goniometers

optical equipment

optical measurement

optical measuring instruments

photogoniometers

Ronchi test

Sagnac effect

very long base interferometry

interferometry

UF **interferograms**

GS **interferometry**

. astronomical interferometry

. differential interferometry

. holographic interferometry

. laser interferometry

. Moire interferometry

. Ronchi test

. shearography

. speckle interferometry

. very long base interferometry

RT diffraction patterns

Fresnel diffraction

Fresnel reflectors

infrared interferometers

isochromatics

null zones

plasma flux measurement

Sagnac effect

scatter plates (optics)

interferon

DEF A protein (lymphokine) released by cells in response to virus infection. When taken up by other cells, interferon inhibits the replication of viruses within them.

RT acquired immunodeficiency syndrome

bacteriophages

biochemistry

∞ biology

human immunodeficiency virus

physiological defenses

viruses

intergalactic media

UF **extragalactic media**

GS **media**

. **intergalactic media**

RT cooling flows (astrophysics)

cosmic dust

cosmic gases

cosmic plasma

dark matter

galactic halos

mass distribution

stellar winds

Sunyaev-Zeldovich effect

intergranular corrosion

DEF Corrosion that occurs preferentially at grain boundaries.

GS chemical attack

. **intergranular corrosion**

corrosion

. **intergranular corrosion**

grain boundaries

RT stress corrosion

transgranular corrosion

interim stages (spacecraft)

GS **interim stages (spacecraft)**

. Inertial Upper Stage

RT multistage rocket vehicles

recoverable spacecraft

reusable spacecraft

space shuttles

stage separation

interim upper stage (STS)

USE **Inertial Upper Stage**

interior ballistics

DEF That branch of ballistics that deals with the propulsion of projectiles, i.e., the motion and behavior of projectiles in a gun barrel, the temperatures and pressures developed inside a gun barrel or rocket.

GS ballistics

. **interior ballistics**

RT propellant tests

interlacing drainage

USE **drainage patterns**

interlaminar stress

(added July 1992)

GS stresses

. **interlaminar stress**

RT composite materials

delaminating

interlayers

laminates

shear stress

stress distribution

stress-strain relationships

interlayers

GS **interlayers**

. multilayer insulation

RT barrier layers

fabrics

insulation

intercalation

interlaminar stress

laminates

∞ layers

ply orientation

sandwich structures

∞ transition layers

interleukins

(added August 2004)

DEF Soluble factors which stimulate growth-related activities of leukocytes as well as other cell types. They enhance cell proliferation and differentiation, DNA synthesis, secretion of other biologically active molecules and responses to immune and inflammatory stimuli.

RT cells (biology)

differentiation (biology)

immune systems

immunology